

الف $\rightarrow$ $\begin{cases} y_1^3 = 2x^2 + x \\ y_2^3 = 2x^2 + x \end{cases} \rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2$ تابع هست

ب $y = \pm 3$ $|y| = 3 \rightarrow y = 3$ یا $y = -3$ $x = 0$ مثال نقض اب تابع نیست

ج $x - 4 = 0 \rightarrow x = 4$ $y - 2 = 0 \rightarrow y = 2$ $[4, 2]$ دو عبارت مثبت حاصل می شود است پس هر کدام جدا مساوی است

د $y = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$ $\cos y = 0$ $x = 0$ مثال نقض د تابع نیست

ه $x^2 - 4x = 0 \rightarrow x(x - 4) = 0 \rightarrow \begin{cases} x = 0 \\ x = 4 \end{cases}$ $D_f = \mathbb{R} - \{0, 4\}$ $D_f \in \mathbb{R}$

و $x^2 - 7x + 14 = 0 \rightarrow \Delta = -1 < 0$ $D_f \in \mathbb{R}$ $D_f \in \mathbb{R}$

ز $x^2 + x + 4 = 0 \rightarrow \Delta = -15 < 0$ $D_f \in \mathbb{R}$ $D_f \in \mathbb{R}$

ح $x^4 - 4x^2 = 0 \rightarrow x^2(x^2 - 4) = 0 \rightarrow \begin{cases} x = 0 \\ x = \pm 2 \end{cases}$ $D_f = \mathbb{R} - \{0, \pm 2\}$ $D_f \in \mathbb{R}$

ط $4 - x > 0 \rightarrow x < 4$ $x - 2 > 0 \rightarrow x > 2$ $2 < x < 4 \rightarrow D_f = [2, 4]$ $D_f \in \mathbb{R}$

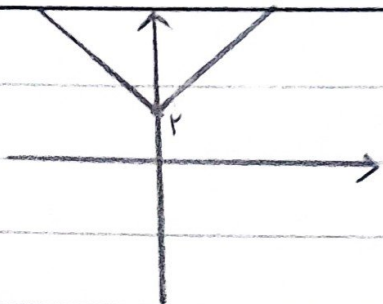
ی $x^2 + 1 = 0 \rightarrow x^2 = -1$ $D_f \in \mathbb{R}$ $D_f \in \mathbb{R}$

ک $x \cdot 2 > 0 \rightarrow x > 2$ $x \cdot 4 = 0 \rightarrow x = 4$ $D_f = [2, +\infty) - \{4\}$ $D_f \in \mathbb{R}$

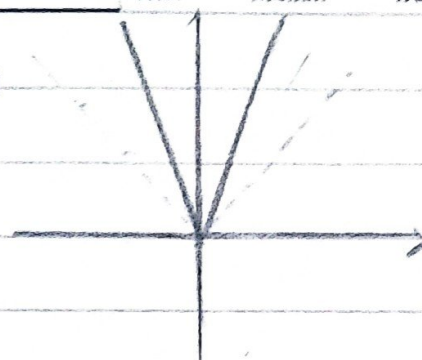
ل $|x| + x^2 = 0 \rightarrow \begin{cases} |x| = 0 \\ x = 0 \end{cases}$ $D_f = \mathbb{R} - \{0\}$ $D_f \in \mathbb{R}$



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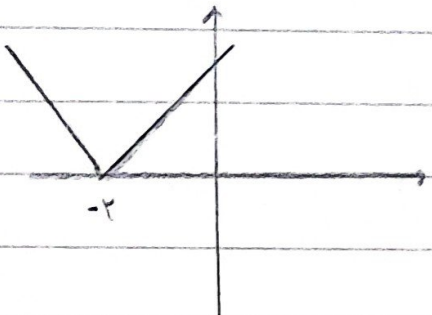
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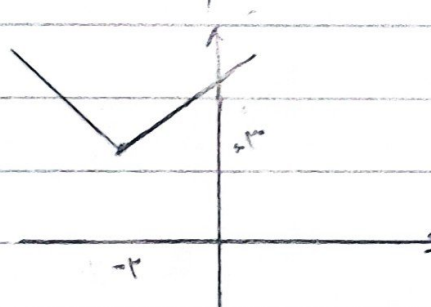
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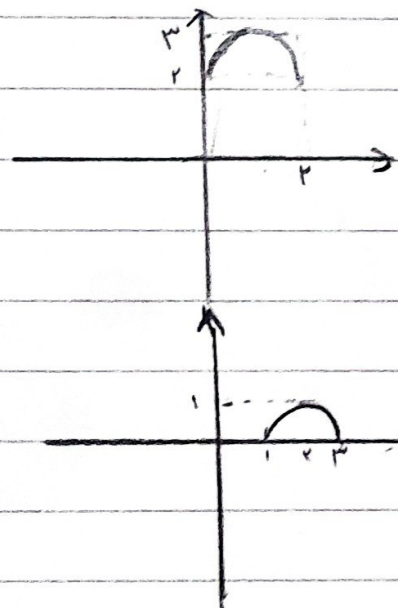
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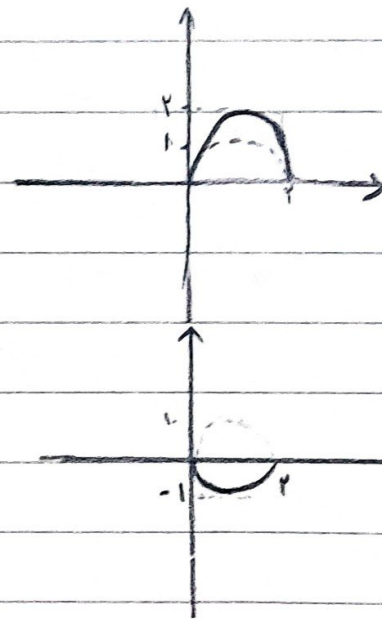
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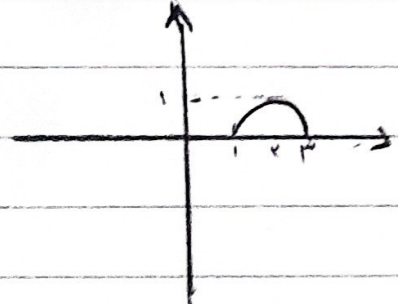
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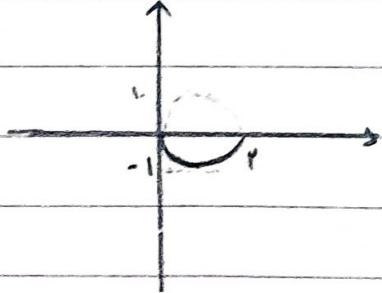
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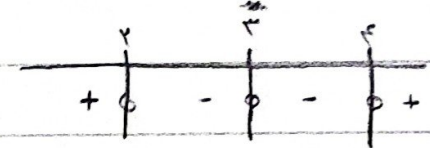


$$D_f: [2, 3] \cup [4, +\infty)$$

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$$D_f: (-\infty, 2] \cup \{3\} \cup [4, +\infty)$$



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[illegible]

~~$$\frac{x-1}{x-1} = 1$$~~

~~$$D_f: [1, 2] \cup (3, +\infty)$$~~

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$$(-\infty, -1) \cup (1, 2] \cup (3, +\infty)$$

$\begin{array}{ccccccc} & -1 & & 0 & & 1 & & 9 \\ \hline + & | & - & | & - & | & + & | \\ & & & & & & & \textcircled{5} \end{array}$

15

17

$\frac{1}{x}$ $\frac{0}{x}$ $\frac{-1}{x}$

21

25

